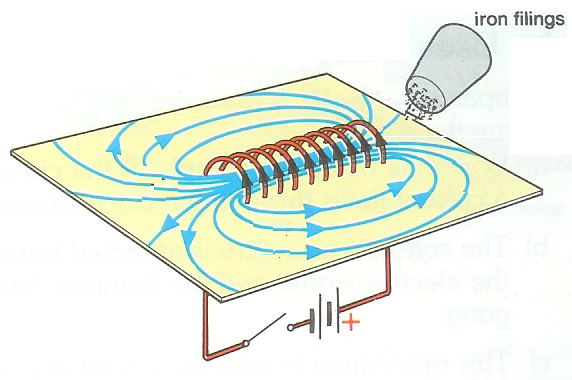
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|  | **Physics** | **شعار-القسم** |
| **Worksheet-4-** |
| Electromagnet |

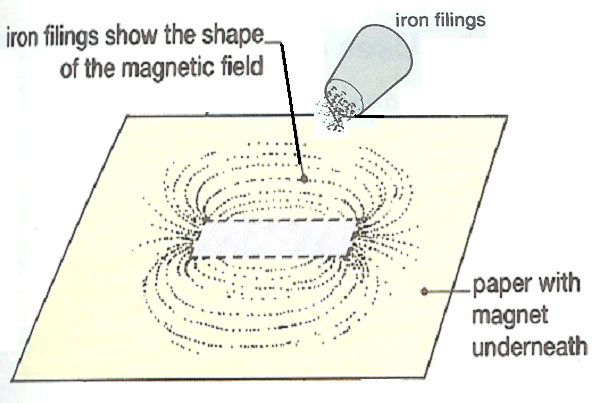
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| Name: Class: 8 /……........ | |
| Book pages: | |
| **22-1-2012** | Date: |
| **18.19.1-8.19.2** | Core Standard number |
| 1. Know that a coil of wire carrying a current produces a magnetic field similar to a bar magnet 2. Know how an electromagnet works and list the factors that affects its strength. 3. Explain the uses of electromagnet | Learning Objectives  Logo + text 2 |

1. Which of the following pictures show the magnetic field lines of a bar magnet, and which show

the magnetic field lines of a solenoid coil?

a- **Bar magnet**. b- **solenoid**

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1. Compare the magnetic fields above.

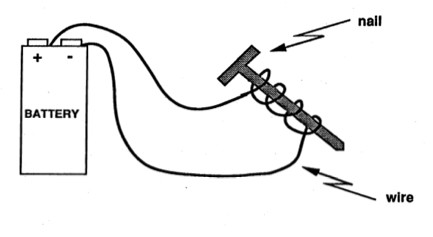
**They have the same shape**

1. Conclusion **The magnetic field a round solenoid has the same shape as the magnetic field**

**a round magnet.**

1. a- An insulator copper wire is wrapped around a nail , the ends of the wire touch to the

battery as shown in the figure below.

 Switch on the battery and try to pick up paper clips with the end of the nail **paper clips are attracted**

Switch off the battery and try to pick up paper clips with the end of the nail **paper clips are not ttracted**

1. What is called the apparatus set up above? Define it

**Electromagnet.**

**An electromagnet is a magnet that can be turned on and off**

1. List the factors that affect the strength of the electromagnet.

**The number of its turns.**

**The amount of the current that flows in it.**

**The nature of its core**

1. a- List everyday uses of an electromagnet:

**Lifting devices**

**The electric bell**

**The electromagnetic relay**

b- Explain the function of the electromagnet in each example:

**-Lifting devices: attract objects and move them to another place**

**-Electric bell: electromagnet pulls and pushes a flexible hammer**

**-electromagnetic relay: transform a small amount of current to a large amount**